APRIL/MAY 2025

23UEL21 — ANALOG ELECTRONICS

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What do you understand by transistor biasing? What is its use?

2. Define thermal runaway.

3. Ten uses of FET?

4. Write any two advantages of MOSFET.

5. What is an oscillator?

6. Write down the resonance frequency equation of Wien bridge oscillator.

7. How do multi vibrator work?

8. Why is monostable multi vibrator called one shot multi vibrator?

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9. Give the advantages of Zener diode.

10. Why is regulated power supply needed?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the operation of potential divider bias with neat diagram.

Or

(b) Write short note on load line analysis.

12. (a) Describe the construction and working of FET.

Or

(b) Differentiate between FET and BJT.

13. (a) Draw the circuit diagram of Colpitt's oscillator and explain its working.

Or

(b) Discuss the working of crystal oscillator with diagram.

14. (a) Describe the operation of monostable multi vibrator.

Or

(b) Draw and explain the working of astable multi vibrator.

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15. (a) Discuss the working of Zener diode as a voltage regulator.

Or

(b) Explain the working of variable voltage regulator ICs.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe various methods used for transistor biasing.

17. Draw the circuit diagram of MOSFET and write its working principle.

18. Discuss the construction and working of phase shift oscillator and write down the oscillation frequency.

19. Describe the working of Schmitt trigger with a neat diagram.

20. With need diagram, explain the working of fixed voltage regulator ICs.

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